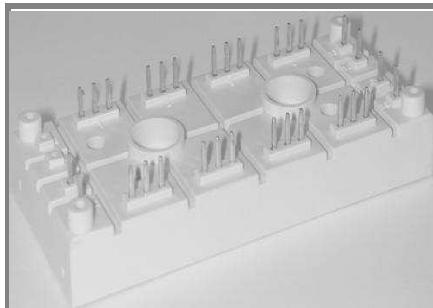


SKD 146/..L140 T4



SEMIPONT™ 6

3-Phase Bridge Rectifier + IGBT braking chopper

SKD146-L140T4

Features

- Compact design
- Two screws mounting
- Heat transfer and isolation through direct copper bonded aluminium oxide ceramic (DCB)
- High surge currents
- Up to 1600V reverse voltage
- IGBT Trench4 inside; max $T_j=175^{\circ}\text{C}$
- CAL4F diode inside, max $T_j=175^{\circ}\text{C}$
- $I_{CM}/I_{FM} = 3 \times I_{c,nom}/I_{F,nom}$
- Rectifier diode, max $T_j=150^{\circ}\text{C}$

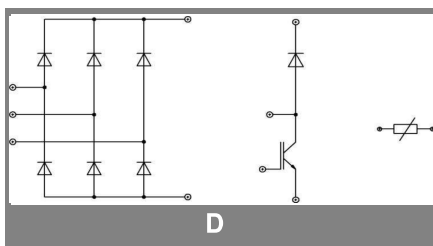
Typical Applications*

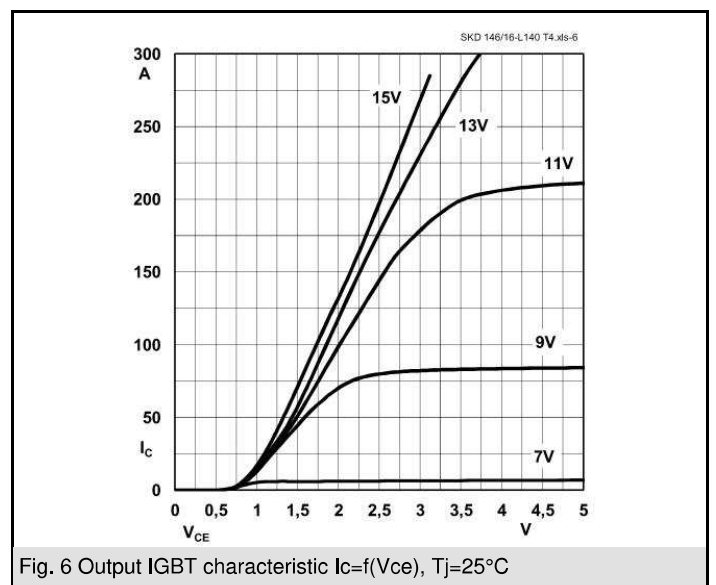
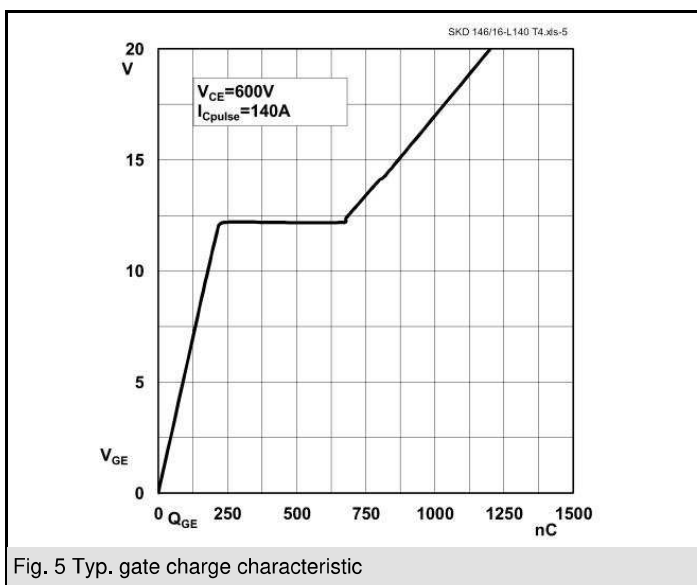
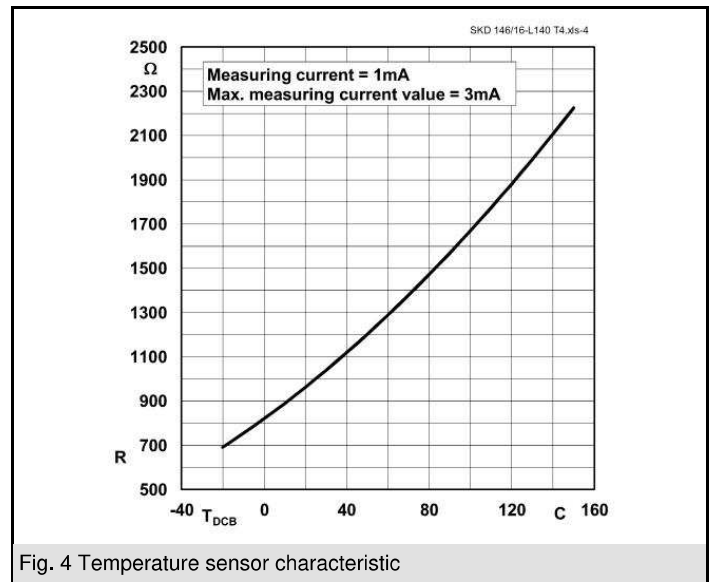
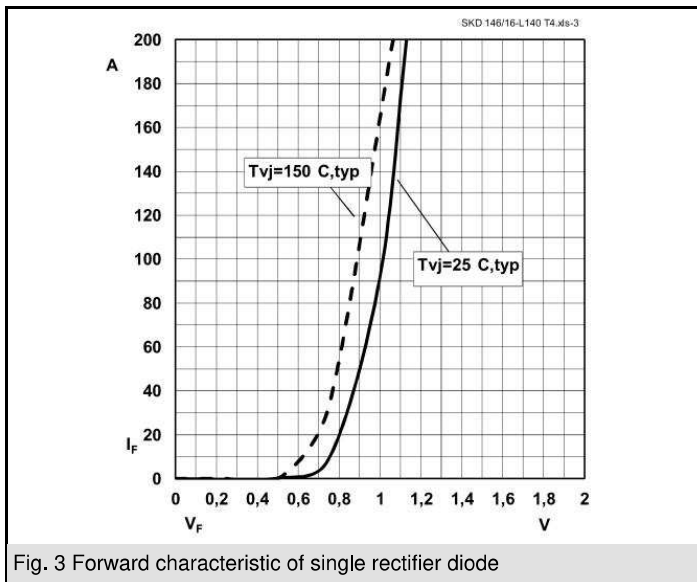
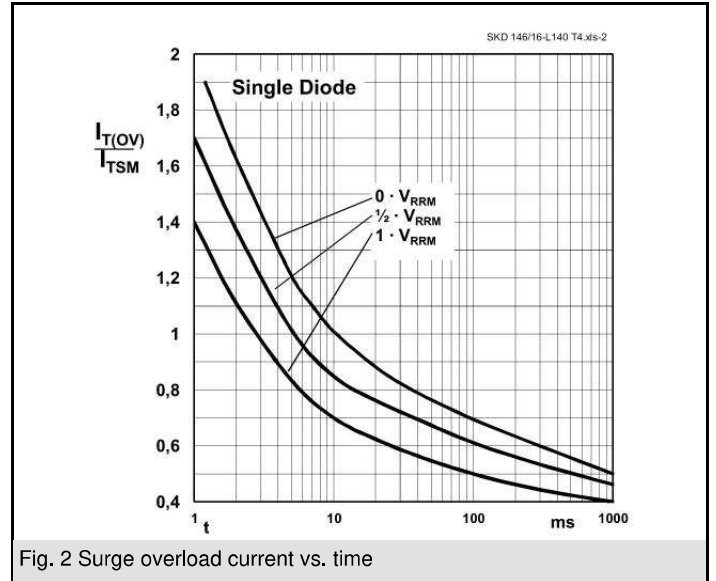
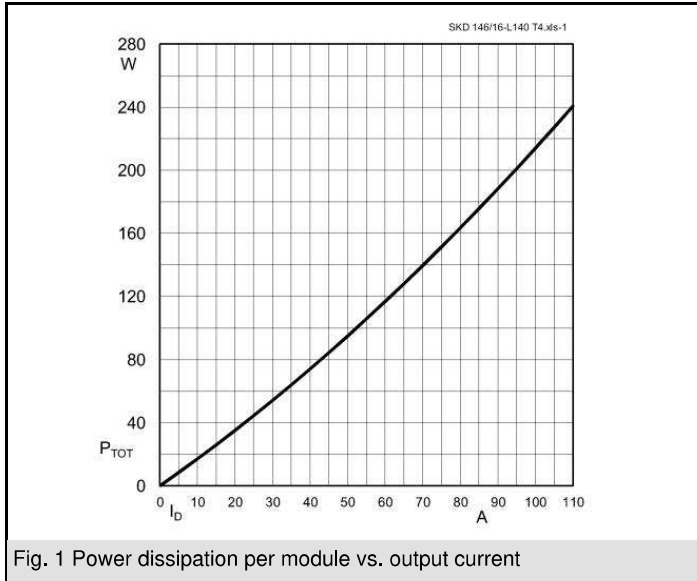
- DC drives
- Controlled filed rectifiers for DC motors
- Controlled battery charger

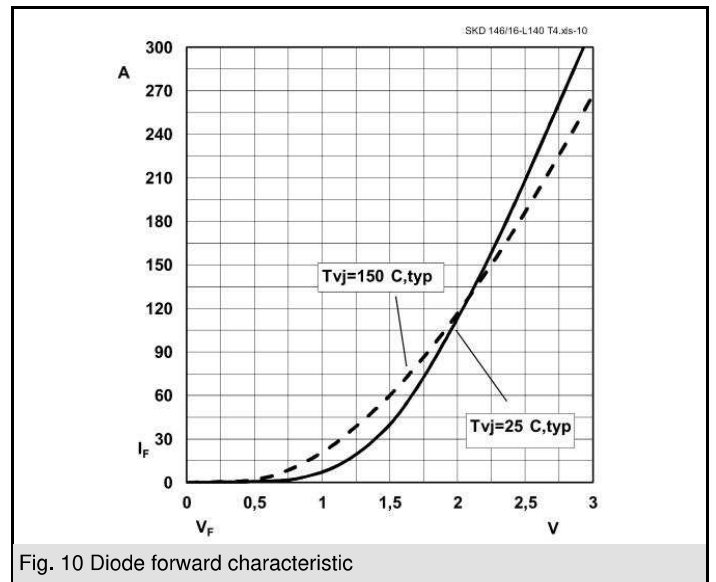
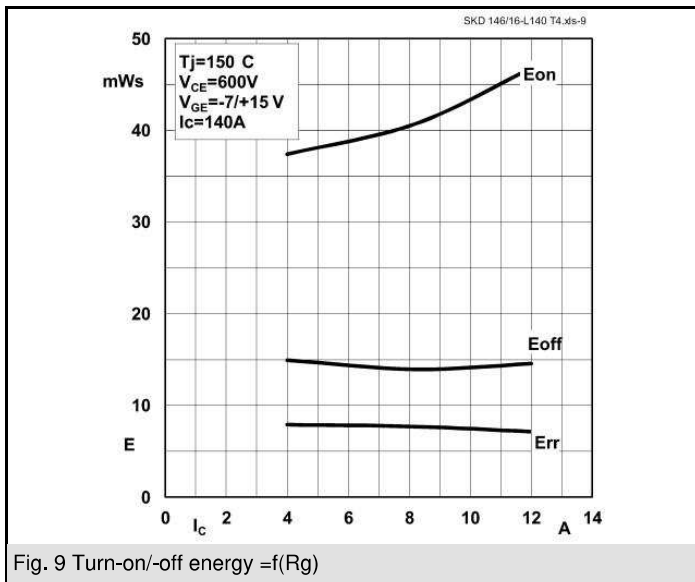
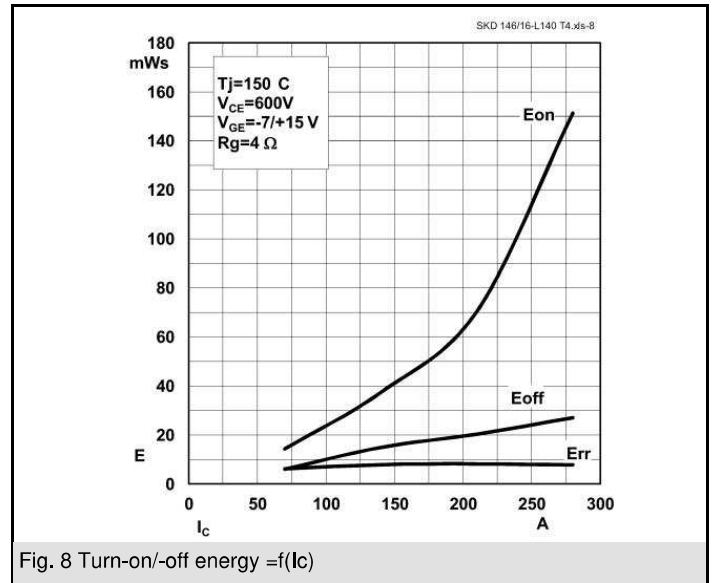
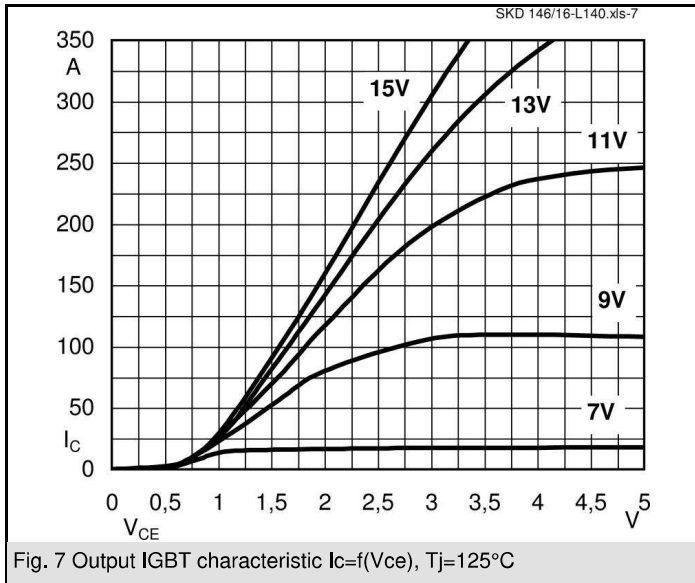
V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 120 \text{ A}$ (maximum value for continuous operation) ($T_s = 70^{\circ}\text{C}$)
1300	1200	SKD146/12-L140T4
1700	1600	SKD146/16-L140T4

Absolute Maximum Ratings		$T_s = 25^{\circ}\text{C}$, unless otherwise specified		
Symbol	Conditions	Values		Units
Bridge - Rectifier				
I_D	$T_s = ^{\circ}\text{C}$; inductive load	140		A
I_{FSM}/I_{TSM}	$t_p = \text{ms}$; ; T_{jmax}	1250		A
i^2t	$t_p = \text{ms}$; ; T_{jmax}	7800		A ² s
IGBT - Chopper				
V_{CES}/V_{GES}	$T_s = ^{\circ}\text{C}$	1200 / 20		V
I_C	$T_s = ^{\circ}\text{C}$	150 (120)		A
I_{CM}	$t_p = \text{ms}$; ; $T_s = ^{\circ}\text{C}$	420		A
Freewheeling - CAL Diode				
V_{RRM}	$T_s = ^{\circ}\text{C}$	1200		V
I_F	$T_s = ^{\circ}\text{C}$	130 (105)		A
I_{FM}	$t_p = \text{ms}$; ; $T_s = ^{\circ}\text{C}$	450		A
T_{vj}	Diode & IGBT (Thyristor)	- 40 ... + 175 (0 ... + 125)		$^{\circ}\text{C}$
T_{stg}		- 40 ... + 125		$^{\circ}\text{C}$
T_{solder}	terminals, s	260		$^{\circ}\text{C}$
V_{isol}	a.c. Hz, RMS min. / s	3000 / 3600		V

Characteristics		$T_s = 25^{\circ}\text{C}$, unless otherwise specified			
Symbol	Conditions	min.	typ.	max.	Units
Diode - Rectifier					
V_{TO} / r_t	$T_j = ^{\circ}\text{C}$	0,8 / 4			V / mΩ
$R_{th(j-s)}$	per diode			0,8	K/W
IGBT - Chopper					
$V_{CE(sat)}$	$I_C = \text{A}$, $T_j = ^{\circ}\text{C}$; $V_{GE} = \text{V}$	1,85		2,1	V
$R_{th(j-s)}$	per IGBT	0,38			K/W
$t_{d(on)} / t_r$	valid for all values:	97 / 185			ns
$t_{d(off)} / t_f$	$V_{CC} = 600 \text{ V}$; $V_{GE} = 15 \text{ V}$; $I_C = 140 \text{ A}$; $T_j = 150^{\circ}\text{C}$;	443 / 82			ns
$E_{on} + E_{off}$	$T_j = 150^{\circ}\text{C}$; $R_G = 4 \Omega$; inductive load	52,3			mJ
CAL - Diode - Freewheeling					
$V_{T(TO)} / r_t$	$T_j = ^{\circ}\text{C}$	0,9 / 7,8		1,1 / 8,6	V / mΩ
$R_{th(j-s)}$	per diode	0,56			K/W
I_{RRM}	valid for all values:	30			A
Q_{rr}	$I_F = 140 \text{ A}$; $V_R = - 600 \text{ V}$; $di_F/dt = - 1700 \text{ A}/\mu\text{s}$	9			μC
E_{off}	$V_{GE} = 0 \text{ V}$; $T_j = 150^{\circ}\text{C}$	7,92			mJ
Temperature Sensor					
R_{TS}	$T = ^{\circ}\text{C}$;	1000 (1670)			Ω
Mechanical data					
M_S	mounting Torque	2,55		3,45	Nm



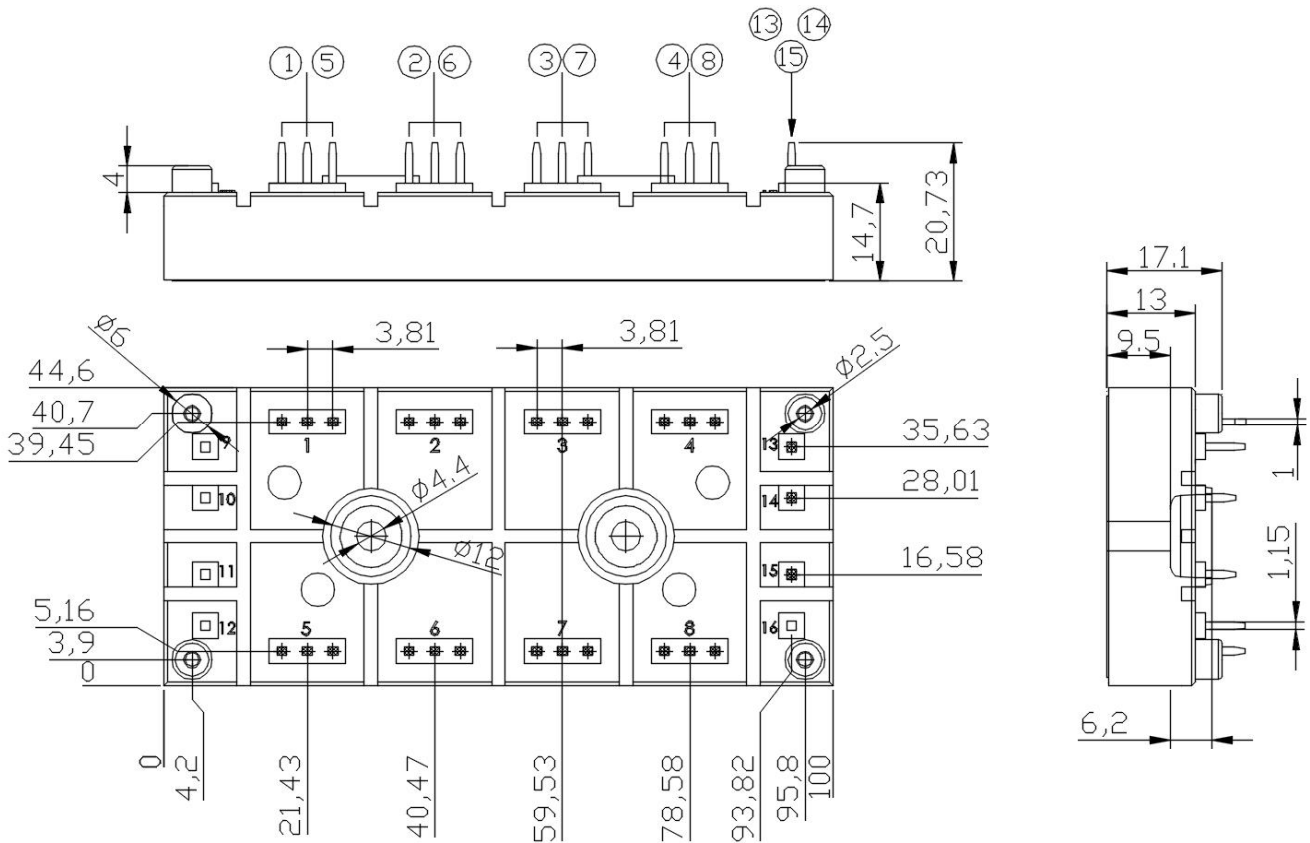




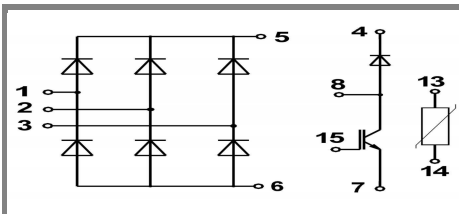
SKD 146/..L140 T4

UL recognized
file no. E 63 532

Dimensions in mm



Case G 60



Case G 60

This is an electrostatic discharge sensitive device (ESDS), international standard IEC 60747-1, chapter IX.

*IMPORTANT INFORMATION AND WARNINGS

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